



South Carolina Department of Health  
and Environmental Control

## **Regulation 61-107.12**

# **SWM: Solid Waste Incineration and Solid Waste Pyrolysis Facilities**

**Effective Date: May 28, 1999**

**Bureau of Land & Waste Management  
Division of Mining & Solid Waste Management  
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Columbia, SC 29201**

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DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

CHAPTER 61

Statutory Authority: 1976 Code

Sections 44-96-260, 44-96-290, 44-96-300,  
44-96-340, 44-96-400, and 44-96-450 (1991)

**R.61-107.12. Solid Waste Management: Solid Waste Incineration and Solid Waste Pyrolysis Facilities.**

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**A. Applicability.**

1. This regulation establishes the procedures, documentation, and other requirements which must be met for the proper operation and management of all solid waste incineration facilities, including all solid waste pyrolysis facilities, and waste-to-energy facilities burning solid waste used for energy recovery.

2. Facilities incinerating solid waste generated in the course of normal operations on property under the same ownership or control as the solid waste incineration facility are exempt from the requirements of this regulation. This exemption includes industrial boilers and furnaces that burn industrial by-products generated on-site, or on properties under the same ownership or control. Mobile air curtain incinerators burning only yard-trash and land-clearing debris generated on-site, or generated on properties under the same ownership or control, are exempt from the requirements of this regulation. Air curtain incinerators temporarily used in clean-up after a natural disaster are exempt from the requirements of this regulation.

3. Industrial boilers and industrial furnaces that burn Refuse-Derived Fuel (RDF) only, or burn RDF with a fossil fuel or wood are exempt from the requirements of this regulation.

4. Facilities that treat contaminated soils pursuant to other regulations are exempt from the requirements of this regulation.

5. Disposal of hazardous waste from conditionally exempt small quantity generators at solid waste incinerators is prohibited unless the incinerator is permitted under the South Carolina Hazardous Waste Management Regulations.

**B. Definitions.**

1. "Air curtain incinerator" means an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which burning occurs. Incinerators of this type can be constructed above or below ground and require a refractory lined chamber or pit.

2. "Applicant" means an individual, corporation, partnership, business association, or government entity that applies for the issuance, transfer, or modification of a permit under this article.

3. "Ash" means the solid residue from the incineration of solid waste.

4. "Closure" means the discontinuance of operation by ceasing to accept, treat, store, or dispose of solid waste in a manner which minimizes the need for further maintenance and protects human health and the environment.

5. "Commercial solid waste" means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial solid wastes.

6. "Department" means the South Carolina Department of Health and Environmental Control.

7. "Disclosure Statement" means a sworn statement or affirmation, the form and content of which shall be determined by the Department and as required by Code Section 44-96-300.

8. "Financial responsibility mechanism" means a mechanism designed to demonstrate that sufficient funds will be available to meet specific environmental protection needs of solid waste management facilities. Available financial responsibility mechanisms include, but are not limited to, insurance, trust funds, surety bonds, letters of credit, personal bonds, certificates of deposit, financial tests, and corporate guarantees as determined by the Department by regulation.

9. "Incineration" means the use of controlled flame combustion to thermally break down solid, liquid, or gaseous combustible wastes, producing residue that contains little or no combustible materials.

10. "Incinerator" means any engineered device used in the process of controlled combustion of waste for the purpose of reducing the volume, and/or reducing or removing the hazardous potential of the waste charged by destroying combustible matter leaving the noncombustible ashes, material and/or residue.

11. "Industrial boiler" means a boiler that produces steam, heated air, or other heated fluids for use in a manufacturing process.

12. "Industrial furnace" means any of the following enclosed devices that are integral components of manufacturing processes and that use controlled flame devices to accomplish recovery of materials or energy:

- a. Cement kilns;
- b. Lime kilns;
- c. Aggregate kilns;
- d. Phosphate Kilns;
- e. Coke ovens;
- f. Blast furnaces;
- g. Smelting, melting and refining furnaces (including pyrometallurgical devices such as cupolas, reverberator furnaces, sintering machines, roasters, and foundry furnaces);
- h. Titanium dioxide chloride process oxidation reactors

- i. Methane reforming furnaces;
- j. Pulping liquor recovery furnaces;
- k. Combustion devices used in the recovery of sulfur values from spent sulfuric acid; and,
- l. Such other devices as the Department may determine on a case-by-case basis using one or more of the following factors:
  - i. The design and use of the device primarily to accomplish recovery of material products;
  - ii. The use of the device to burn or reduce raw materials to make a material product;
  - iii. The use of the device to burn or reduce secondary materials as effective substitutes for raw materials, in processes using raw materials as principal feedstocks;
  - iv. The use of the device to burn or reduce secondary materials as ingredients in an industrial process to make a material product;
  - v. The use of the device in common industrial practice to produce a material product; and,
  - vi. Other factors, as appropriate.

13. "Industrial solid waste" means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under subtitle C of RCRA. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: Electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing, leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

14. "Local government" means a county, any municipality located wholly or partly within the county, and any other political subdivision located wholly or partly within the county when such political subdivision provides solid waste management services.

15. "Medical waste," for the purposes of this regulations, means infectious waste as defined in South Carolina Infectious Waste Management Regulation 61-105.E.

16. "Permit" means the process by which the Department can ensure cognizance of, as well as control over, the management of solid wastes.

17. "Putrescible wastes" means solid waste that will rapidly decompose with the potential to cause odor and attract vectors.

18. "Pyrolysis" means the chemical decomposition of a material by heat in the absence of oxygen.

19. "Recovered materials" mean those materials which have known use, reuse, or recycling potential; can be feasibly used, reused, or recycled; and have been diverted or removed from the solid waste stream for sale, use, reuse, or recycling, whether or not requiring subsequent separation and processing, but does not include materials when recycled or transferred to a different site for recycling in an amount which does not equal at least seventy-five percent (75%) by weight of materials received during the previous calendar year.

20. "Refuse Derived Fuel (RDF)," for the purpose of this regulation, means a type of fuel produced from solid waste by separating some, or all, of the noncombustible from the combustible portions, shredding and classifying the waste by size. This includes all classes of RDF including low-density fluff RDF through densified RDF and pelletized RDF.

21. "Region" means a group of counties in South Carolina which is planning to or has prepared, approved, and submitted a regional solid waste management plan to the Department pursuant to Section 44-96-80.

22. "Residential solid waste" means solid waste (including garbage, trash, and sanitary waste from septic tanks) derived from households (including single and multiple residences.)

23. "Solid waste" means any garbage, refuse, or sludge from a waste treatment facility, water supply plant, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities. This term does not include solid or dissolved material in domestic sewage, recovered materials, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to NPDES permits under the Federal Water Pollution Control Act, as amended, or the Pollution Control Act of South Carolina, as amended, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1964, as amended. Also excluded from this definition are application of fertilizer and animal manure during normal agricultural operations or refuse as defined and regulated pursuant to the South Carolina Mining Act, including processed mineral waste, which will not have a significant adverse impact on the environment.

24. "Solid waste management" means the systematic control of the generation, collection, source separation, storage, transportation, treatment, recovery, and disposal of solid waste.

25. "Solid waste management facility" means any solid waste disposal area, volume reduction plant, transfer station, or other facility, the purpose of which is the storage, collection, transportation, treatment, utilization, processing, recycling, or disposal, or any combination thereof, of solid waste. The term does not include a recovered materials processing facility or facilities which use or ship recovered materials, except that portion of the facilities which is managing solid waste.

26. "Special waste" means nonresidential and commercial solid wastes, other than regulated hazardous wastes, that are either difficult or dangerous to handle and require unusual management, including, but not limited to, those waste contained in Code Section 44-96-390(A).

27. "Vector" means a carrier that is capable of transmitting a pathogen from one organism to another including, but not limited to, flies and other insects, rodents, birds, and vermin.

28. "Waste-to-energy facility," for the purposes of this regulation, means a facility that uses an enclosed device using controlled combustion to thermally break down solid, liquid, or gaseous combustible solid waste to an ash residue that contains little or no combustible material and that produces electricity, steam, or other energy as a result. The term does not include facilities that primarily burn fuels other than solid waste even if such facilities also burn some solid waste as a fuel supplement. The term also does not include facilities that burn vegetative, agricultural, or silvicultural wastes, clean dry wood, methane or other landfill gas, wood fuel derived from construction or demolition debris, or waste tires, alone or in combination with fossil fuels.

### **C. General Provisions.**

1. Incineration facilities shall be consistent with the State and host Region/County Solid Waste Management Plans. Prior to the issuance of a permit for a new or expanded facility, the Department shall approve an allowable capacity based on the Region/County Solid Waste Management Plans, the facility's design capacity, and the following criteria:

(a) No solid waste incinerator facility with a daily capacity in excess of six hundred (600) tons shall be permitted within the State. Any incinerator permitted by the Department prior to May 27, 1991, i.e., the effective date of the Solid Waste Policy and Management Act, is exempt from this tonnage limit and shall adhere to the facility's permitted tonnage limit; and,

(b) No solid waste incinerator facility with a daily capacity in excess of one hundred (100) tons shall be permitted to be sited within three (3) miles of another such facility.

2. The siting, design, construction, operation, closure, and post-closure activities of new or expanding solid waste incineration facilities shall conform to the standards set forth in this regulation and the facility's permit.

3. A permit obtained from the Department pursuant to these regulations, does not exempt the incineration facility from the necessity of obtaining other Department required permits (e.g. air quality, water pollution control).

4. No person owning or operating an incineration facility shall cause, suffer, allow, or permit the handling of regulated hazardous wastes or regulated infectious wastes at the incineration facility, unless the facility is specifically permitted for such wastes.

5. Within six (6) months of the effective date of this regulation, all owners and/or operators of existing solid waste incineration facilities, which are not currently permitted, shall submit to the Department, plans and specifications in accordance with Section D. below for upgrading the existing facility to meet the design requirements established in this regulation.

6. Within twelve (12) months of the effective date of this regulation, existing solid waste incineration facilities, which are not currently permitted, shall conform with the standards as set forth in this regulation, unless otherwise approved by the Department. Monitoring and reporting requirements shall commence on the effective date of this regulation.

7. The Department shall require a disclosure statement from the permit applicant in accordance with Code Section 44-96-300. Local governments and regions comprised of local governments are exempt from this requirement. The Department may accept one (1) disclosure statement for multiple facility permit applicants.

8. A permit shall be required for each site or facility although the Department may include one or more different types of facilities in a single permit if the facilities are collocated on the same site.

9. Construction of an incinerator shall not be initiated until all required approvals are obtained.

10. The permittee of a solid waste incineration facility shall notify the Department prior to transfer of ownership or operation of the facility during its operating life or during the post-closure care period. The Department will approve a reissuance of the permit to the new owner provided that the facility is in compliance and the new owner agrees in writing to assume responsibility in accordance with these regulations.

11. Facilities that have a valid Department permit for managing hazardous or infectious waste, may request to be exempted from certain portions of this regulation.

#### **D. Permit Application Requirements.**

1. Prior to the construction, modification, or operation of a solid waste incineration facility, a permit shall be obtained from the Department pursuant to these regulations. The application shall be signed by an engineer duly licensed and registered under the laws of the State of South Carolina.

2. Any person wishing to obtain a permit pursuant to these regulations, from the Department to operate a solid waste incineration facility, shall submit to the Department, three (3) copies of the following documents:

- a. A completed permit application, on a form provided by the Department;
- b. An engineering report which shall include the following:
  - (1) An overall description of the facility;
  - (2) A description of the process and equipment to be used;
  - (3) A description of the area and proposed population which will be served by the facility;
  - (4) A description of the types and quantities of solid waste to be accepted;
  - (5) A description of the existing site. Any existing site conditions that will be utilized during the operation of the proposed incinerator shall be identified as existing on the plan including, but not limited to, structures, access roads, on-site roads, parking areas, loading and unloading areas, fences, and gates;
  - (6) A description of the security measures, including, but not limited to fences, gates, and signs;
  - (7) The location of storage areas for incoming waste, incinerator ash, precipitator waste, and other non-combustible waste generated by the incinerator;
  - (8) A description of any re-use or recycling planned for the ash residue; and,
  - (9) An identification of the ultimate disposal location for all facility-generated waste residues including, but not limited to, ash residues, and non-combustible waste, and the proposed alternate disposal locations for any unauthorized waste types, which may have been unknowingly accepted;
- c. Complete engineering plans and specifications that, at a minimum, address the items listed below. Permanently located air curtain incinerators are exempt from item (7) below.
  - (1) A map showing the specific location, land use, and zoning within one-fourth (3) mile of the boundaries of the proposed facility;
  - (2) Drawings of buildings and other structures, on a scale no greater than one (1) foot per quarter inch, showing types of construction, layout, and dimensions for unloading, storage, and processing areas;
  - (3) A site plan, on a scale of not greater than two hundred (200) feet per inch, designating the property boundaries and all existing and proposed structures and access roads;
  - (4) Weighing of all solid waste to be accepted at the facility;

- (5) Storage areas for incoming solid waste and out-going ash;
  - (6) Detailed engineering plans and specifications for the incinerator and other related machinery;
- and,
- (7) Detailed engineering plans and specifications for leachate control and related equipment;
- d. A complete description of the personnel training program that meets the requirements of Section I of this regulation;
- e. An ash management plan that at a minimum addresses the following:
- (1) Identification of the facility approved by the Department that will receive the residue; and,
  - (2) A certification that the facility shall have adequate capacity to handle such residue;
- f. A description of the air quality monitoring plan;
- g. A description of the manner in which waste waters, if any, from the facility will be managed;
- h. A quality assurance and quality control report. The facility owner or operator shall institute a control program (including measures such as signs, monitoring, alternate collection programs, passage of local laws, etc.) to assure that only solid waste authorized by the Department is being processed at the facility;
- i. A written contingency plan which describes a technically and financially feasible course of action to be taken in response to contingencies during the construction and/or operation of the facility. The contingency plan shall be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous constituents to air, soil, or surface water;
- j. A narrative description of the general operating plan for the facility, including the origin, composition and weight of solid waste that is to be processed at the facility, the process to be used at the facility, the daily operational methodology of the process, the loading rate, the proposed capacity of the facility and the expected life of the facility. The plan shall include a descriptive statement of any materials recycling or reclamation activities to be operated in conjunction with the facility, either on the incoming solid waste or the out-going residue. The plan shall describe how the facility will meet all applicable regulatory requirements;
- k. An operation and maintenance manual describing how the facility shall be maintained and operated in accordance with the intended use and permit of the facility. The manual shall include, but not be limited to, the following:
- (1) A description of the proposed procedures for the operation of each major facility component;
  - (2) Procedures to be followed during startup and scheduled and unscheduled shutdown of operations;
  - (3) Identification of the operating variables for the process and any control devices used to detect



a malfunction or failure, the normal range of these variables, and a description of the method of monitoring; and the sequence of responsible action in the event that the equipment and instruments exceed normal operating ranges;

(4) Methods and schedules to check operation of control equipment and instrumentation, including a list of all equipment and instruments requiring calibration and a schedule of proposed calibration intervals. All process instruments shall be calibrated no less than once per year. Process control instruments shall be maintained in an operable condition;

(5) A description of the proposed measures to control dust, noise, litter, odor, rodents and insects at the facility;

(6) An inventory and location of all facility records and as-built drawings; and,

(7) An estimate of the type, quantity, and on-site storage of fuels needed for the facility;

l. A detailed closure plan which shall identify the steps necessary to close the facility. The plan may be amended at any time during the active life of the facility with Department approval. The plan shall be amended whenever changes in operating plans or facility design affect the closure plan, or whenever there is a change in the expected year of closure; and,

m. A demonstration of financial responsibility. The owner or operator of each facility shall establish sufficient financial assurance acceptable to the Department to ensure satisfactory maintenance, closure, and post-closure of the facility; or to carry out any corrective action which may be required as a condition of a permit. Consideration shall be given to mechanisms which would provide flexibility to the owner or operator in meeting its financial obligations. The owner or operator shall be allowed to use combined financial responsibility mechanisms for a single facility and shall be allowed to use combined financial responsibility mechanisms for multiple facilities, utilizing actuarially sound risk-spreading techniques. Local governments are exempt from this requirement until such time as federal regulations require local governments or regions to demonstrate financial responsibilities for such facilities and the Department promulgates regulations addressing this issue.

n. A waste control plan that, at a minimum, addresses the items outlined below. Facilities that receive only municipal solid waste, and permanently located air curtain incinerators are exempt from items (2)(a) & (b) below.

(1) Waste approval procedures for making the determination of whether to approve or refuse proposed waste streams;

(2) Waste screening procedures and a time frame for making the determination of whether to accept or reject shipments of incoming waste streams to include procedures for:

(a) Verifying that the profile sheets provided by the generators match all shipped containers; and,

(b) Conducting extended verification testing on each shipment of incoming waste;

(3) Waste disposal procedures for the proper handling, storage, and disposal of all unauthorized wastes; and,

(4) Record keeping procedures for maintaining documentation related to the acceptance, rejection, storage, operational data, and proper disposal of all wastes received by the facility. Records shall be maintained for a minimum of five (5) years and shall be made available to the Department upon request.

**E. Design Requirements.** Design requirements addressed in this section apply to all solid waste incineration facilities, unless otherwise approved by the Department. Permanently located air curtain incinerators shall comply with items 1 through 9 and item 14.b.(3) & (4) of this section.

1. Solid waste incineration facilities shall be adjacent to or have direct access to roads which are of all weather construction and capable of withstanding anticipated load limits.

2. Solid waste incineration facilities shall not be located within the 100-year floodplain.

3. The active waste handling area of a solid waste incineration facility shall not be located within five hundred (500) feet of any surface water.

4. Solid waste incineration facilities shall comply with the U. S. Army Corps of Engineers and the U. S. Environmental Protection Agency requirements concerning wetlands.

5. The active waste handling area of a solid waste incineration facility, shall not extend closer than five hundred (500) feet to any drinking water well. Permanently located air curtain incinerators shall not extend closer than one hundred (100) feet to any drinking water well.

6. Locations shall allow for sufficient room to minimize traffic congestion and allow for safe operation.

7. No solid waste incineration facility shall extend closer than one hundred (100) feet to any property line.

8. The active waste handling area of a solid waste incineration facility, shall not extend closer than one thousand (1000) feet to residences, schools, day-care centers, hospitals or recreational park areas. Permanently located air curtain incinerators shall not extend closer than five hundred (500) feet to residences, schools, day-care centers, hospitals or recreational park areas.

9. Solid waste incineration facilities shall adhere to all Federal and State rules and regulations and all local zoning, land use and other applicable local ordinances.

10. The tipping, loading and unloading areas shall be:

- a. Constructed with a minimum slope of 1%;
- b. Constructed of impervious materials, e.g., asphalt, concrete;
- c. Provided with a water supply for storage and transfer area cleaning purposes; and,
- d. Equipped with drains, pumps, or equivalent means to facilitate the removal of water for proper disposal.

11. The transfer structures, buildings, and ramps shall be constructed of materials that can be easily cleaned.

12. The solid waste storage area and tipping area must include fire detection and protection equipment.
13. Leachate and washwater from a solid waste incineration facility shall not be allowed to drain or discharge into waters of the State unless an effluent disposal permit (e.g. land application or NPDES) is approved by the Department.
14. Emergency preparedness. In addition to requirements set forth in the contingency plan, all solid waste incineration facilities shall at a minimum:
  - a. Provide adequate aisle space to allow for emergency equipment;
  - b. Be equipped with the following:
    - (1) An internal communications system capable of providing immediate emergency instruction to facility personnel and an alarm system to notify facility personnel of an emergency condition;
    - (2) A device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, and State or local emergency response teams;
    - (3) Portable fire extinguishers, fire control equipment and spill control equipment; and,
    - (4) Water available at adequate volume and pressure to supply water hose streams, automatic sprinklers, or water spray systems.

**F. Operations Criteria.** A solid waste incineration facility shall be designed and operated according to the minimum criteria listed in this section, unless otherwise approved by the Department. Permanently located air curtain incinerators shall comply with the following criteria except items 2., 3., & 9.

1. All incinerators shall be operated in a manner so as to prevent the creation of a public health nuisance or potential health hazard. Litter, odors, rats, insects, flies, mosquitos, and other vectors shall be controlled at the facility.
2. All solid waste containing putrescible wastes shall be processed within seventy-two (72) hours of receipt unless an exemption is requested and approved by the Department in the facility's general operating plan.
3. All solid waste containing putrescible wastes that will not be processed on site shall be transferred to a permitted disposal facility within seventy-two (72) hours of its receipt.
4. Prior to initial operation of a new incinerator, the Department shall be notified so that an inspection may be made of the facility to determine conformance with the approved plans.
5. The incinerator facility shall be operated and maintained so as to minimize interference with other activities in the area.
6. Access Controls. The operator shall restrict the presence of, and shall minimize the possibility for any unauthorized entry onto the facility. A statement of the days and hours of operation shall be posted at the entrance of the facility and access, except for Department and/or emergency personnel, shall be limited to

those times when authorized personnel are on duty.

7. Receipt and Handling of Solid Waste.

a. The facility is authorized to process only solid waste authorized by Department permit. The weight of all solid waste received at the facility shall be recorded and incorporated into the quarterly report.

b. Outside storage and/or processing of putrescible waste is prohibited.

c. Unauthorized or untreatable solid waste may be temporarily stored on the premises for a period not to exceed one week; the facility may request an exemption to the one week limit to be incorporated in its general operating plan. The facility must ensure that waste does not create a nuisance or a sanitary or environmental problem.

d. Incompatible wastes shall be segregated so as not to create a fire hazard.

8. Process changes. The owner or operator shall receive approval from all appropriate Department program areas in writing of all process changes before they are implemented. Permit modifications shall be required as deemed necessary by the Department.

9. Emergency preparedness.

a. All solid waste incineration facilities shall at a minimum:

(1) Test and maintain as necessary to assure its proper operations, all facility emergency equipment including, but not limited to, communications or alarm systems, fire protection equipment, spill control equipment, and personal safety equipment;

(2) Provide immediate access for all personnel involved in the facility operation to an internal alarm or emergency communication device; and,

(3) Provide for an emergency coordinator.

b. The contingency plan shall be implemented immediately whenever there is a fire, explosion, or release of hazardous constituents which could threaten human health or the environment, and the Department immediately notified using the 24-hour number 803-253-6488.

c. Any unscheduled shutdown that exceeds twenty-four (24) hours shall be reported to the Department's District Director of the district in which the facility is located.

10. Guidelines shall be established for identifying any items or materials that shall be removed prior to the incineration process.

11. Trained personnel shall be present at all times during the operation of the facility.

**G. Monitoring and Reporting Requirements.** Permanently located air curtain incinerators are exempted from the requirements of this section except item 2.

1. Should the Department confirm potential environmental and/or health problems associated with the

facility, monitoring (including groundwater, surface water, and air quality) may be required by the Department, as appropriate, and based on a case-by-case evaluation to ensure protection of the environment.

2. An annual report, on a form provided by, or acceptable to, the Department, shall be submitted to the Department by October 15 for the previous fiscal year (July 1 through June 30,) which includes at a minimum, the following information:

a. Type (i.e., residential, medical, commercial, industrial, special, and other) and total quantity in tons of solid waste received at the facility for the previous fiscal year;

b. The county in South Carolina in which the solid waste originated, or the State if the waste originated outside South Carolina;

c. The transfer station, if applicable; and,

d. A description of the method and quantities of the distribution and/or disposal of the solid waste, ash, and non-acceptable waste transported off-site for disposal or reuse or recycling.

3. A report containing the following information for ash residue sampling and analyses as outlined in Section J of this regulation, shall be submitted to the Department within sixty (60) days of sample collection:

a. The date and place of sampling and analysis;

b. The names of the individuals who performed the sampling and analysis;

c. The sampling and analytical methods utilized;

d. The results of such sampling and analyses; and,

e. The signature and certification of the report by an appropriate authorized agent for the facility.

4. Upon implementation of the contingency plan, the owner or operator shall immediately notify the Department (using the 24-hour number 803-253-6488) and note, in the operating record and the annual report, the time, date, and details of the incident. Upon request, a written report shall be submitted to the Department that includes the following information:

a. The name, address and telephone number of the operator and the facility;

b. The date, time and type of incident (e.g., fire, explosion, etc.);

c. The type and quantity of materials involved;

d. The extent of injuries, if any;

e. An assessment of actual or potential hazards to human health or the environment, where this is applicable;

f. The estimated quantity and disposition of solid waste, liquids, or material recovered that resulted from the incident; and,

g. The procedures or equipment available to prevent a recurrence of the reported event.

5. Records of all monitoring and reporting information, pursuant to these regulations, shall be maintained for a minimum of at least five (5) years from the sample or measurement date, unless otherwise specified by the Department. These reports shall be made available to Department personnel upon request.

## **H. Closure and Post-Closure Procedures.**

1. Financial Assurance. Facilities shall fund a financial responsibility mechanism acceptable to the Department to ensure the satisfactory maintenance, closure and post-closure care prior to accepting waste. A final closure cost estimate, based on third party costs to complete closure by disposing of the maximum quantity of material at a facility shall be calculated annually and adjusted annually, if necessary. Local governments are exempt from this requirement until such time as federal regulations require such local governments or regions to demonstrate financial responsibility for such facilities and the Department promulgates regulations addressing this issue.

2. Closure and Post-Closure Care Procedures. Closure and post-closure procedures addressed in this section apply to all solid waste incineration facilities.

a. At least sixty (60) days prior to closure, provide written notice of intent to close and a proposed closure date to the Department. The final quantity of solid waste shall be received no less than thirty (30) days prior to closure date.

b. Upon closing, the owner or operator shall immediately post signs at the facility which state that the facility is no longer in operation.

c. Within thirty (30) days after receiving the final quantity of solid waste, the owner or operator shall remove all solid waste and shall remove or treat all waste residues, contaminated soils and equipment in accordance with the approved closure plan, and notify the Department upon completion.

d. After receiving notification that the facility closure is complete, the Department will conduct an inspection of the facility. If all procedures have been correctly completed, the Department will approve the closure in writing, at which time the Department permit shall be terminated.

e. If the owner or operator demonstrates that not all contaminated soils can be practicably removed or treated as required in paragraph (b) of this section, then the owner or operator shall submit for Department approval, a post-closure care plan.

**I. Personnel Training Requirements.** Solid waste incineration facility personnel training programs pursuant to these regulations, shall at a minimum:

1. Identify the positions which will require training and a knowledge of the procedures, equipment, and processes at the facility;

2. Describe how facility personnel will be trained to perform their duties in a way that ensures the facility's compliance with these regulations, including the proper procedures that shall be followed in the processing and handling of solid waste not authorized by the Department to be received at the facility;

3. Be designed to ensure that facility personnel are able to respond effectively to all emergencies, including different types of fires, by familiarizing them with the contingency plan, emergency and safety equipment, emergency procedures and emergency systems; and,

4. Documentation of training. The following records of training shall be maintained at the facility:

a. The job title for each position at the facility related to solid waste management and the name of the employee filling each job;

b. A written job description for each position listed under paragraph 4.a. of this section. This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or unit, but must include the requisite skill, education, or other qualifications, and duties of employees assigned to each position;

c. A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under paragraph 4.a. of this section; and,

d. Records that document the training or job experience required under this section that has been given to, and completed by, facility personnel.

5. Training records on current personnel shall be kept until closure of the facility; training records on former employees shall be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

**J. Ash Residue Requirements.** Permanently located air curtain incinerators are exempt from the requirements of this section. However, the ash from these facilities shall be properly disposed immediately after removal from the incinerator.

1. Sampling and Analysis Requirements and Procedures.

a. Ash residue generated by a solid waste incinerator shall be sampled and analyzed according to the current Environmental Protection Agency (EPA) acceptable methodology for determining the hazardous nature of the ash being disposed.

b. The required analyses of all residual ash, shall be performed in accordance with the conditions of the solid waste management facility permit and current solid waste management regulations. The analyses shall be performed separately on the bottom ash and the fly ash, unless the bottom ash and fly ash are combined, in which case the combined ash shall be sampled and analyzed.

c. At a minimum, the ash residue at a new incineration facility shall be sampled and analyzed:

- (1) Prior to the initial disposal of ash from the facility;
- (2) Monthly for the first six (6) months of incineration operations at the facility;
- (3) Semi-annually during the remaining life of the facility; and,
- (4) At any time there is a change in the waste stream being incinerated.

d. At a minimum, the ash residue at an existing incineration facility shall be sampled and analyzed semi-annually.

e. If the Department deems necessary, more stringent sampling and analysis may be required.

f. A sampling and analysis plan shall be submitted to and approved by the Department, along with the ash residue management plan that identifies both the sample collection and analytical protocols that must be used to obtain representative samples of ash residue.

g. All analyses performed pursuant to this section shall be conducted by a laboratory certified by the Department.

h. The results of all such analyses shall be submitted to the Department no later than 60 (sixty) days after testing. Records shall be maintained at the facility for a period not less than five (5) years, and be available to Department personnel upon request.

## 2. Contents of the Ash Management Plan.

a. Prior to the construction and/or operation of a solid waste incinerator, an ash residue management plan shall be submitted to and approved by the Department.

b. The ash residue management plan shall describe the methods, equipment, and structures necessary to prevent the uncontrolled dispersion of ash residue considering potential pathways of human or environmental exposure including, but not limited to, inhalation, direct contact, and potential for groundwater and surface water contamination.

c. The ash residue management plan shall address the handling, storage, transportation, treatment, and disposal or reuse or recycling of ash residue as described in this section.

d. Handling. The owner and/or operator shall design, construct, operate, and maintain ash handling systems that ensure that ash residue (whether bottom ash, fly ash or combined ash) is properly wetted or contained to ensure that dust emissions are controlled during on-site and off-site storage, loading, transport, and unloading. The ash residue shall be wet enough so the surface of the ash remains damp after unloading at a landfill.

e. Storage.

(1) The owner and/or operator shall provide sufficient on-site ash residue storage capacity to ensure that facility operations continue during short term interruptions of ash residue transportation and/or disposal. The quantity of residue stored on-site shall be limited to no more than seven (7) times the daily design output.

(2) Residue stored on-site may be either:

(a) Stored in watertight, leak resistant containers located inside a building or enclosed structure. Prior to storage, free liquid shall be allowed to drain from the ash residue. Liquid drained during this process shall be collected and disposed in an approved waste water disposal system. Loaded containers may be stored outside of a building or enclosed structure if all free-liquid has been drained and the container is sealed and covered to prevent rain water infiltration or airborne emissions; or,



(b) Stored on-site in a waste pile which is located in an enclosed structure. The residue shall be placed on an impermeable base. A runoff management system shall be provided to collect and control the free liquid that is allowed to drain from the ash residue.

f. Transportation. Ash residue shall be drained of free liquid prior to transport. Ash residue transportation containers or vehicles shall be watertight and leak resistant and shall be designed and constructed such that any closures at or near the bottom are sealed to prevent leakage under normal transportation conditions. Closures shall be fitted with gaskets or materials that will not be deteriorated by the ash. The transport vehicle shall be enclosed or covered to prevent the top surface of the load from becoming dried. Provisions shall be made to wash vehicle tires and/or body to prevent ash from tracking onto roadways.

g. Disposal. Disposal of all ash generated by the facility shall be in accordance with standards set forth by Department regulations.

h. Reuse or Recycling. This section applies to ash residue in the form of bottom ash only, fly ash only, or combined ash that is proposed to be reused or recycled as an ingredient or as a substitute for a raw material.

(1) The owner and/or operator shall demonstrate to the Department's satisfaction that the resulting material: has a known market or disposition; and, that contractual arrangements have been made with a second person for use as an ingredient in a production process and that this person has the necessary equipment to do so.

(2) The owner and/or operator shall also:

(a) Chemically and physically characterize the ash residue and each finished product or products and identify the quantity and quality to be marketed;

(b) Describe the proposed method of application or use, available markets and marketing agreements;

(c) Demonstrate that the intended use will not adversely affect the public health, safety, welfare and the environment;

(d) If the use of the ash residue includes the mixing with different types of materials, a description of each product mixture shall be provided; and,

(e) Provide the Department with a copy of any information regarding the reuse or recycling of ash residue.

(3) The reuse or recycling of ash residue does not relieve the owner and/or operator from compliance with other monitoring requirements specified in this regulation.

**K. Corrective Action Requirements.** If at any time, the Department determines that the solid waste incineration facility poses an actual or potential threat to human health or the environment, the owner or operator shall implement a corrective action program reviewed and approved by the Department.

**L. Violations and Penalties.** A violation of this regulation or any permit, order, or standard subjects the person to the issuance of a Department order, or to civil or criminal enforcement action in accordance with Code Section 44-96-450. A person to whom an order is issued may appeal it as a contested case in accordance with R.61-72 and the Administrative Procedures Act.

**M. Permit Review.** A permit issued pursuant to this regulation shall be effective for the design and operational life of the facility, to be determined by the Department. At least once every five (5) years, the Department will review the environmental compliance history of each permitted solid waste incineration facility.

1. If, upon review, the Department finds that material or substantial violations of the permit issued pursuant to these regulations, demonstrate the permittee's disregard for, or inability to comply with applicable laws, regulations, or requirements and would make continuation of the permit not in the best interests of human health and safety or the environment, the Department may, after a hearing, amend or revoke the permit, as appropriate and necessary. When a permit is reviewed, the Department shall include additional limitations, standards, or conditions when the technical limitations, standards, or regulations on which the original permit was based have been changed by statute or amended by regulation.

2. The Department may amend or attach conditions to a permit when:

a. There is significant change in the manner and scope of operation which may require new or additional permit conditions or safeguards to protect human health and safety and the environment;

b. The investigation has shown the need for additional equipment, construction, procedures, and testing to ensure the protection of human health and safety and the environment; and,

c. The amendment is necessary to meet changes in applicable regulatory requirements.

**N. Severability.** Should any section, paragraph, sentence, clause or phrase of this regulation be declared unconstitutional or invalid for any reason, the remainder of this regulation shall not be affected thereby.